

SWMDH-9608 & 9612 SERIES

IEC61850-3 CERTIFIED INDUSTRIAL MANAGED LAYER-3 GIGABIT SWITCH



Description

IEC61850-3 CERTIFIED

The **SWMDH-96** Series is a highly reliable Gigabit Managed Ethernet Switch. Its IEC61850-3 compliance allows it to be core part in the IEC 61850 network in power substations and control centers. The series meets the IEC61850 applications and to support the transmission of GOOSE messages used for fast communication between IEDs.

IEEE 1588v2 PRECISION TIME PROTOCOL

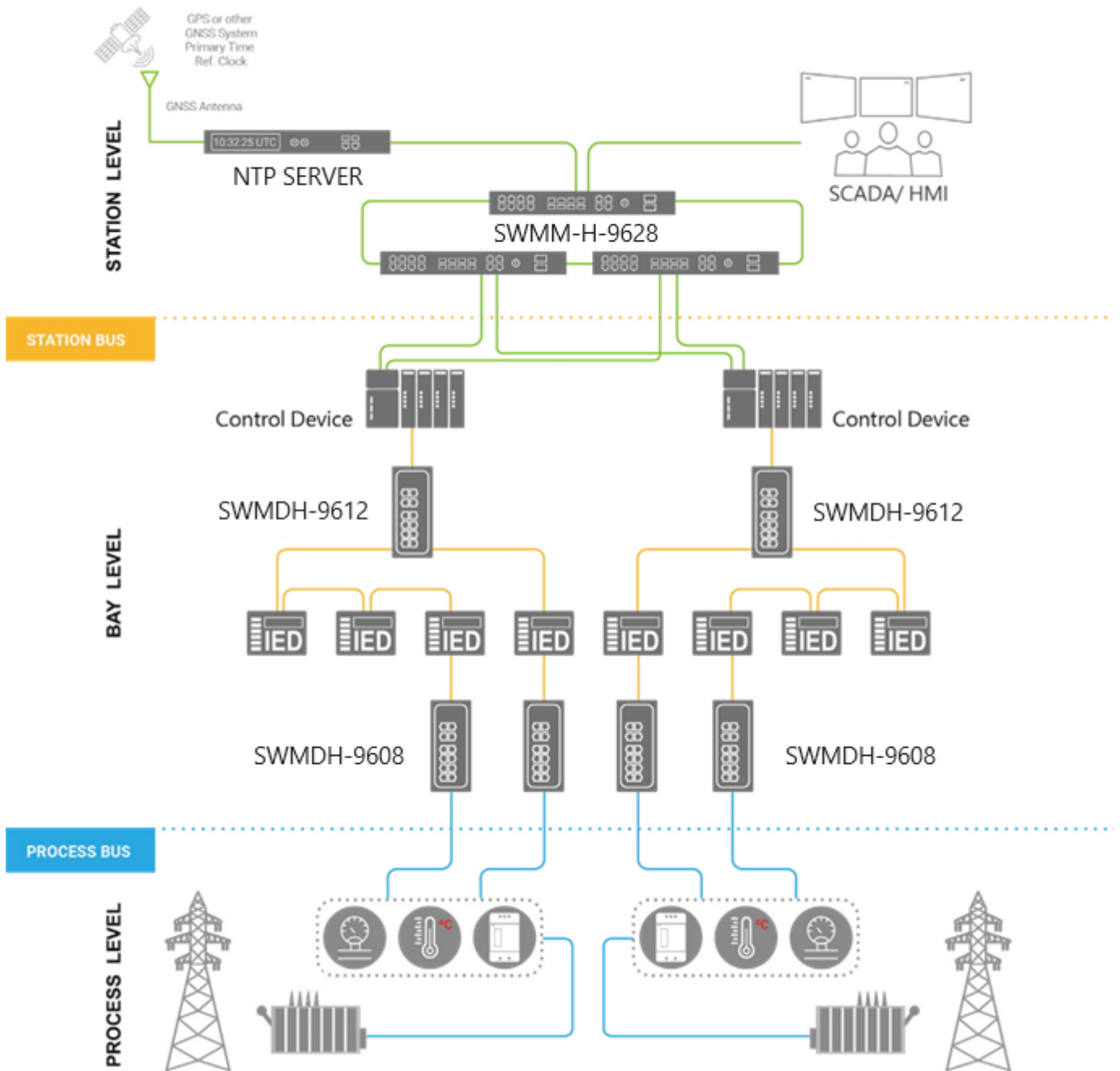
The IEEE1588 Precision Time Protocol capabilities allow the deployment of **SWMDH-96** Series in networks with stringent time Synchronization requirements. It can act as hw-assisted End-to-End transparent clock providing nanosecond-accurate correction-field packet-update and as a sw-assisted boundary clock.

ERPS AND COMPATIBLE RING RECOVERY TIME <20MS @40 SWITCHES

The device equips up to 8x10/100/1000BASE-T(X) RJ-45 ports and up to 4 1000BASE-X SFP ports. With its high performance, it provides network redundancy self-recovery mechanisms is less than 20ms on full load that enables the user to build a reliable network through a redundant ring topology. ERPS/STP/MSTP/RSTP/MRP (Manager/ Client) and many other compatible rings are supported. With a Multifunctional web dashboard, its offers intelligent features such as Quality of service (QoS), Virtual LAN (VLAN), IGMP, IGMP Snooping, Port mirroring and security.

The **SWMDH-96** Series is designed to be used in core power utilities. It provides dual redundant power inputs with Reverse Polarity Protection and two sets of relay that allow the user build up a stand-alone fault alarm system. Its wide operating temperature of -40 to 85 °C and DIN-Rail mounting capacities make it suitable to be used in remote substations where harsh environment and reliability is an issue.

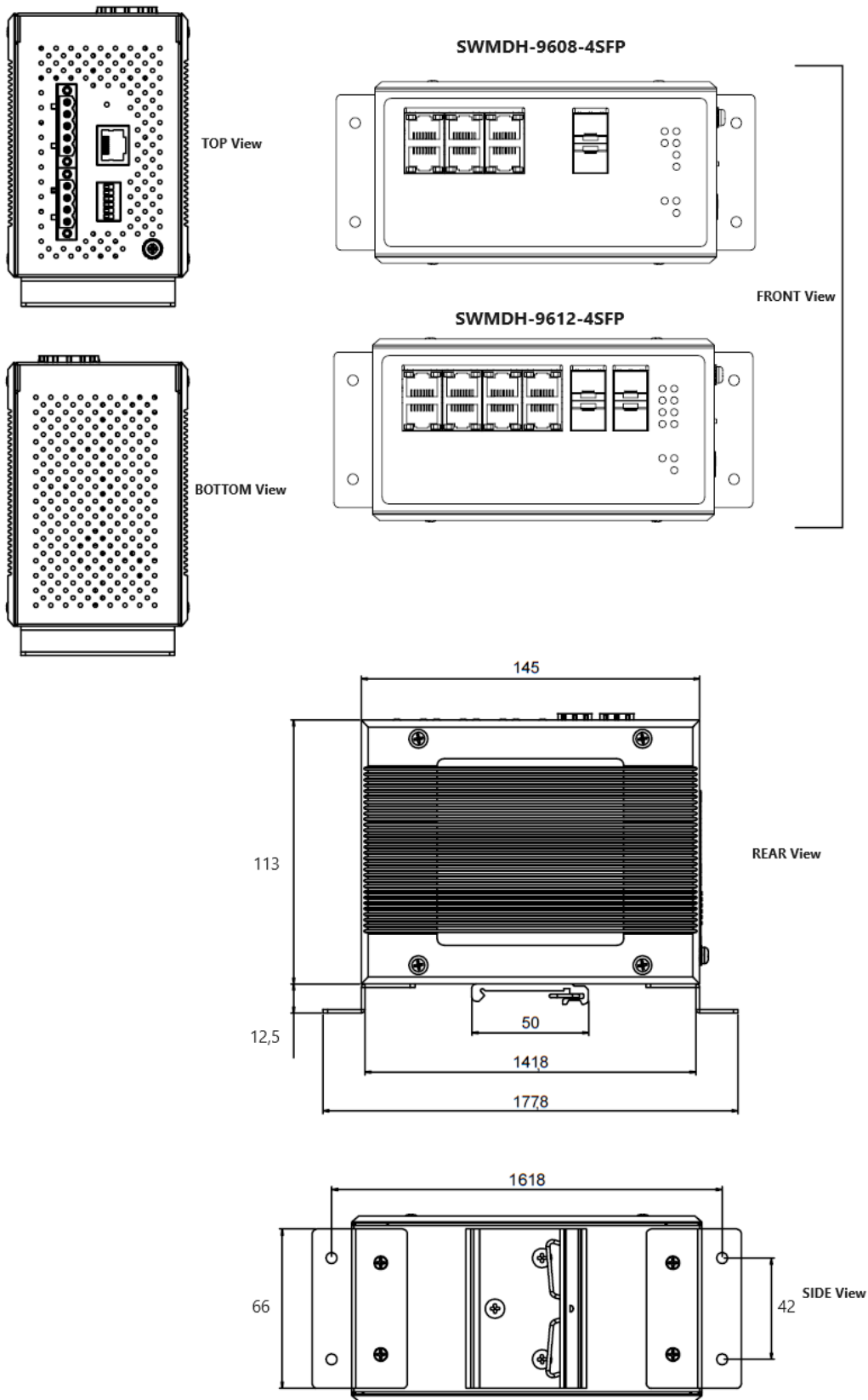
Application



SWMDH-96 is a product that specially fits with power station and substation application.

This product usually plays an important role at the bay level. With full gigabit ports, **SWMDH-96** can help to transmit a bunch of data from process level to upper level. **SWMDH-96** also supports IEEE 1588v2 HW-assisted End-to-End Transparent clock to deliver the precise time in power station or substation

Dimensions & Layout



Specifications

Switch Properties	
Priority Queues	8
VLAN Table	4096
MAC-Based VLAN	512
VLAN ID Range	VID 1 to 4094
Trunk Group	4
Static IGMP Groups	128
Dynamic IGMP Groups	256
Mac Table Size	16k
Packet Buffer Size	1.5MB
Jumbo Frame	9216 Byte

Specifications

Ethernet	
Standard	<p>IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX IEEE 802.3x for Flow Control, back pressure flow control IEEE 802.1d-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.1x for Authentication</p>
Protocols	<p>IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Manager/ Client), LLDP, IEEE 1588 PTP V1/v2, IEEE 1588 Hardware-Assisted End-to-End Transparent Clock and Software-assisted Boundary Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy compatible Ring, DHCP Snooping, ARP Spoof Prevention, Dynamic ARP Inspection, MLD, UDLD, IP Source Guard, sFlow</p>
Layer-3 Protocols	<p>Routing: IPv4 Unicast static routing, RIP v1/v2, OSPFv2, BGP4, Multicast: IGMP v1/v2/v3, DVMRP, PIM-DM, PIM-SM, PIM-SSM Routing Redundancy: VRRP (Virtual Router Redundancy Protocol)</p>
Redundancy	<p>ITU-T G.8032 ERPS, STP, RSTP, MSTP, MRP (Manager/Client), Compatible Ring/Chain, U-Ring</p>
Automation Profiles	<p>Modbus/TCP status registers</p>
SNMP MIB	<p>MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415</p>

Specifications

Power	
Input Voltage	24-57 VDC for DC series 100~240 VAC for AC series
Input Current (System)	0.63 A @ 24 VDC for DC series 0.16 A @ 100 VAC for AC series
Connector	5-Pin 5.08mm Lockable Terminal Block
Reverse Polarity Protection	Yes
Interfaces	
RJ-45 Ports	Up to 8 * 10/100/1000BASE-T(X) auto negotiation speed
Fiber Optics Ports	Up to 4 * 1000BASE-X SFP slot
LED Indicators	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, SFP Link
Console	RS232 (RJ45 connector)
Relay Output	2 relay outputs with current carrying capacity of 1A @ 24 VDC
DIP Switches	Ring Control
Button	Reset Button
Physical Characteristics	
Housing	IP30 SPCC Black housing
Dimension (W x H x D)	77x 145 x 113 mm
Weight	1.000g (AC series) 1.200g (DC series)
Installation	DIN-Rail, Wall mount (optional kit)
Environmental Limits	
Operating Temperature	-40 °C to +85 °C (-40 °F to +185 °F)
Storage Temperature	-40 °C to +85 °C (-40 °F to +185 °F)
Ambient Relative Humidity	5% to 95%, 55 °C (Non-condensing)

Regulatory Approvals

Regulatory Approvals	
Safety	UL/CUL/IEC(CB) 61010-2-201
EMC	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4
Industry Specific	IEC61850-3 (including 6.10.3 Seismic test), IEEE 1613

Test	Item	Value	Level
IEC 61000-4-2	ESD	Contact Discharge $\pm 8KV$	4
		Air Discharge $\pm 15KV$	4
IEC 61000-4-3	RS	80-1000MHz	3
		1.0-3.0GHz	10 (V/m) 80% AM 3
IEC 61000-4-4	EFT	AC Power Port $\pm 4.0KV @ 2.5kHz$	4
		DC Power Port $\pm 4.0KV @ 2.5kHz$	4
		Signal Port $\pm 2.0KV @ 5kHz$	4
IEC 61000-4-5	Surge	AC Power Port Line-to Line $\pm 2.0kV$	4
		AC Power Port Line-to Earth $\pm 4.0kV$	4
		DC Power Port Line-to Line $\pm 1.0kV$	3
		DC Power Port Line-to Earth $\pm 2.0kV$	3
		Signal Port Line-to Earth $\pm 4.0kV$	4
IEC 61000-4-6	CS	AC Power Port 10V, 150kHz~80MHz, 80% AM	3
		DC Power Port 10V, 150kHz~80MHz, 80% AM	3
		Signal Port 10V, 150kHz~80MHz, 80% AM	3
IEC 61000-4-8	PFMF	Enclosure	100A/m continuous 1000A/m for 3S 5 5
IEC 61000-4-10	Damped Oscillatory Magnetic Field	Enclosure	100A/m, 1000KHz, 1MHz 5
IEC 61000-4-11	DIP	AC Power Port	Drop 70%, 3 times/S (1 Period), Drop 40%, 3 times/1mS (50 Period), Drop 100%, 3 times/50mS (5&50 Period) N/A
Shock	MIL-STD-810G Method 516.5		
Drop	MIL-STD-810F Method 516.5		
Vibration	MIL-STD-810F Method 514.5 C-1 & C-2		
RoHS II	Yes		
MTBF	20 years		

Ordering information

Model	Description
SWMDH-9608-2SFP-DC	2*1000FX SFP;6*1000TX RJ45; Power Input: DC
SWMDH-9608-2SFP-AC	2*1000FX SFP;6*1000TX RJ45; Power Input: AC
SWMDH-9612-4SFP-DC	4*1000FX SFP;8*1000TX RJ45; Power Input: DC
SWMDH-9612-4SFP-AC	4*1000FX SFP;8*1000TX RJ45; Power Input: AC



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